

**Notice of Allowability**

Application No.

10/651,998

Applicant(s)

SAWAGUCHI, HIDEKI

Examiner

Esaw T. Abraham

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt filed on 07/30/07.
2. ☒ The allowed claim(s) is/are 1-7 and 14-15 (renumbered as 1-9).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 08/30/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

*Handwritten signature: Jacques Louis Jacques*  
**JACQUES LOUIS JACQUES**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

## DETAILED ACTION

### *EXAMINER'S AMENDMENT*

1. An examiner's amendment to the record appears below. Should the changes and or additions be acceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no latter than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Leonid D Thenor on August 30 2007.

2. The application has been amended as follows:

As per claim 3:

Line 8, change the phrase "first error-correction coding" to ---first error-correcting code---

Line 10, change the phrase "thereby generates" to ---thereby generating---

Line 19, change the phrase "second error-correction coding" to ---a second error-correcting code---

Line 27 insert ---and--- before the phrase "the second redundant code".

As per claim 4:

Line 8, change the phrase "second error-correction coding" to ---second error-correction code---

### *Examiner's statement for reason for allowance*

2. Claims **1-7** and **14-15** have been allowed.

The following is an examiner's statement for allowance:

**As per claim 1:**

The prior art of record, Hittori et al. (U.S. PN: 6,798,593 teach or disclosed a method and apparatus for reproducing data recorded on a recording medium and a method and apparatus for recording and/or reproducing data for a recording medium (see col. 1, lines 9-14). Hattori further teaches that for recording signals on these recording mediums, physical processing needs to be performed on the recording mediums, such as by controlling the direction of magnetization by a write head for a recording medium of the magnetic recording system, or by forming pits of lengths corresponding to signals by a stamper for a recording medium of the optical recording system and in order to permit the normal operation of amplitude control (amplitude gain control) of readout signals or clock reproduction (data timing recovery) on the reproducing side reading out the signals recorded on the recording medium, the signal recording side for recording signals on a recording medium routinely uses a system of modulation encoding the signal in a pre\set fashion to record the resulting modulation-coded signal (see col. 1, lines 22-35).

However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a recording/reproducing signal processing circuit for processing the information to be recorded or reproduced said format on the medium comprising a preamble including additional information for the control of recorded position Information; amplitude gain control and data timing recovery, an information code composed of plural code sequence blocks, a first redundant code composed of plural code sequence blocks used for hard-decision type data error correction, a second

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redundant code inserted in the code sequence block used for soft output type error correction, wherein the number of code symbols of the second redundant code is equal to or less than a number of code symbols of the first redundant code. Consequently, claim 1 is allowed over the prior art.

Claim 2, which is/are directly or indirectly dependent/s of claim 1 is also allowable over the prior art of record.

**As per claim 3:**

The prior art of record, Hittori et al. (U.S. PN: 6,798,593 teach or disclosed a method and apparatus for reproducing data recorded on a recording medium and a method and apparatus for recording and/or reproducing data for a recording medium (see col. 1, lines 9-14). Hattori further teaches that for recording signals on these recording mediums, physical processing needs to be performed on the recording mediums, such as by controlling the direction of magnetization by a write head for a recording medium of the magnetic recording system, or by forming pits of lengths corresponding to signals by a stamper for a recording medium of the optical recording system and in order to permit the normal operation of amplitude control (amplitude gain control) of readout signals or clock reproduction (data timing recovery) on the reproducing side reading out the signals recorded on the recording medium, the signal recording side for recording signals on a recording medium routinely uses a system of modulation encoding the signal in a preset fashion to record the resulting modulation-coded signal (see col. 1, lines 22-35).

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However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a first encoding circuit that applies first error-correction coding to the information code sequence by the predetermined unit, and adds a first redundant code sequence to said coded information code sequence, thereby generates an error correction code sequence, a *concatenated* encoder that divides the error-correction code sequence output from the first encoding circuit into continuous plural code sequence blocks having predetermined length, stores the plural code sequence blocks, executes second error-correction code for each code sequence block, and generates a second redundant code sequence with referring to the contents of each code sequence block, and a code switch that outputs the plural code sequence blocks and the second redundant code sequence alternatively, thereby generating the information code *sequence* comprised of the plural code sequence blocks, wherein said information code sequence includes the first redundant code having a length of the code sequence block, the second redundant code is inserted in the code sequence block. Consequently, claim 3 is allowed over the prior art.

Claim **4-7 and 14-15**, which is/are directly or indirectly dependent/s of claim 3 are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Esaw T. Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8am-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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